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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/754,580	01/05/2001	David H. Blount		2900

7590 07/23/2004
David H. Blount, M.D.
6728 Del Cerro Blvd.
San Diego, CA 92120

EXAMINER

KRISHNAN, GANAPATHY

ART UNIT	PAPER NUMBER
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1623

DATE MAILED: 07/23/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/754,580

Applicant(s)

BLOUNT, DAVID H.

Examiner

Ganapathy Krishnan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 5, 6, 11 and 13 recite the term modified. In the absence of the specific modifications to the chemical core claimed or distinct language to describe the modifications, the identity of the said modifications would be difficult to describe and the metes and bounds of said modified lignin applicants regard as the invention cannot be sufficiently determined because they have not been particularly pointed out or distinctly articulated in the claims. Modified lignin is interpreted to mean lignin in any form or lignin with any type of substitution other than the naturally occurring lignin.

Claims that depend from base claims that are unclear/indefinite are also rendered unclear/indefinite.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*,

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422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 6 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 6,606,184 ('184 patent) in view of Blount (US 4,321,360, '360 patent).

Claim 6 is drawn to a process for the production of modified lignin, lignin-cellulose resinous products, carbon dioxide, carbohydrates and ethanol, wherein aqueous alkali metal hydroxide is added to biomass and heated to about 140 degree Celsius with agitation, adding water to the mixture to dissolve most of the converted biomass, adjusting the pH to 3-7, decanting the modified lignin, crystallizing the carbohydrate in the filtrate after evaporation of water, fermentation of the carbohydrate to produce ethanol, adding alkaline earth metal oxide to produce alkali metal hydroxide and alkaline earth metal salt which is heated in a kiln to produce alkaline earth metal oxide for reuse.

Steps 1-4, 7 and 10-11 of instant claim 6 which involve aqueous alkali metal hydroxide addition to biomass and heating to about 100-240 degree Celsius with agitation, adding water to the mixture to dissolve most of the converted biomass, crystallizing the carbohydrate in the filtrate, adding alkaline earth metal oxide to produce alkali metal hydroxide and alkaline earth metal salt which is heated in a kiln to produce alkaline earth metal oxide for reuse are recited in steps 1-9 of claim 1 in the '184 patent.

The '184 patent however does not recite the steps of adjusting the pH to 3-7, separating

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the lignin-cellulose resinous products and the modified lignin and fermentation of the carbohydrates to ethanol and carbon dioxide and separation of ethanol from the water.

Blount ('360 patent) teaches the adjusting of the pH to 5-6.5 and filtering of the lignin-cellulose polymer and fermentation of the carbohydrates to ethanol in a process for production of carbohydrates from a cellulose containing plant (see col. 3, lines 25-35, example 1; col. 4, example 2 and col. 6, lines 10-34). Blount ('360 patent) also teaches that other cellulose products like with wood pulp may be used after removal of lignin by the soda process (col. 5, lines 8-10).

In the process steps of claim 1 of the '184 patent, steps 1-4 involve mixing of sludge with sodium hydroxide and heating to 100 to 240 degree Celsius and step 6 recites adding carbon dioxide (acidic salt forming compound) to react with the sodium hydroxide. The heating with sodium hydroxide would have broken down any lignin present in the sludge material and adding carbon dioxide to react with sodium hydroxide would have adjusted the pH between 3-7 since the reaction is an acid-base (neutralization reaction) reaction. In step 7 of claim 1 of the '184 patent, filtration is done. This would have removed separated any lignin and lignin-cellulose resinous product from the carbohydrates. These steps are equivalent to steps 5 and 6 of instant claim 6. Fermentation of the carbohydrates to ethanol are seen to be non-critical steps that can be incorporated in the process of the '184 patent.

It would have been obvious to one of ordinary skill in the art that the process of claim 6 is substantially overlapping with the process of claim 1 of the '184 patent in view of the teachings of the '360 patent.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 7-15 are rejected under 35 U.S.C. 102(b) as being anticipated individually by Blount (US 4321360) and Hedrick (US 4650689).

Claims 1-5 and 7-15 are drawn to the products modified lignin, lignin-cellulose resinous compounds, carbon dioxide, carbohydrates and ethanol.

Blount teaches the production of lignin-cellulose resinous product, carbon dioxide and carbohydrates (see col. 3-5, examples 1-6). The lignin-cellulose product also reads on modified lignin.

Hedrick teaches the production of ethanol via fermentation of cellulosic material (col. 4 line 12 through col. 5, line 55).

These disclosures of Blount and Hedrick are deemed to meet the limitations of claims 1-5 and 7-15,

Claims 1-5 and 7-15 are Product-by-process claims. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps.

“Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable

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even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Conclusion

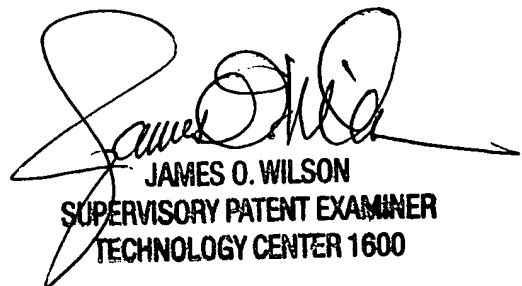
Claims 1-15 are rejected

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ganapathy Krishnan whose telephone number is 571-272-0654. The examiner can normally be reached on 8.30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached on 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GK


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